A. Summary of Potential KRE Restoration Projects

Table A.1. Summary of potential KRE restoration projects

Project description	Source organization
Acquire riparian land parcels along Kalamazoo River to preserve the existing natural corridor and potentially to enhance broader nature corridor development in the area (e.g., look to link with areas like Fort Custer and Gun Lake wilderness areas).	Land Trust Alliance regional director
Determine whether additional restoration activities are warranted in the area around Bryant's Mill pond to enhance the recovery of the natural resources there. Could be considered a "demonstration" restoration project to address the post cleanup conditions likely to exist if other contaminated shore areas are addressed.	Land Trust Alliance regional director
Acquire riparian land parcels along Kalamazoo River to preserve the existing natural corridor.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Control the loading of paper waste into the Kalamazoo (regardless of associated PCB contamination) in order to limit adverse effect on benthic resources and help return sediments to their natural condition.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Remove the three sill-level MDNR controlled dams on the Kalamazoo to restore a free flowing waterway to benefit fishery and recreators.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Provide increased recreational access to the Kalamazoo (ideally after PCB cleanup and access facilities could be linked with infrastructure needed to remove sill level dams, e.g., roads for equipment and staging areas).	MDNR – Kalamazoo-Allegan district wildlife supervisor
Expand and enhance the use of marsh lands adjacent to the Kalamazoo (e.g., increase the number of nesting platforms in the areas for raptors while maintaining the forested aspect of the areas).	MDNR – Kalamazoo-Allegan district wildlife supervisor
Acquire land in the Lake Allegan shoreline area to limit waterside development and to link existing MDNR parcels in the area – have prioritized sites but not formally disclosed (willing seller-willing buyer restrictions and avoid driving up price).	MDNR – Kalamazoo-Allegan district wildlife supervisor
Continue and expand the prairie redevelopment projects currently under way on close to 200 acres in the Augusta Creek area near Kalamazoo.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Enhance the Oak Barrens area (note: mentioned that this is complicated by the presence of wildlife already in the area).	MDNR – Kalamazoo-Allegan district wildlife supervisor
Explore potential conversion of agricultural lands adjacent to area waterways (e.g., buffer conversion) to control non point source pollution loading to the area.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Undertake projects to remove invasive nonnative species in MDNR lands and to restore native vegetation in those areas.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Acquire existing farmlands to create wildlife corridors between existing state game areas, e.g., corridor to link the Allegan and Yankee Springs areas (note the land around these isolated game areas is coming under increasing development pressure from Grand Rapids population).	MDNR – Kalamazoo-Allegan district wildlife supervisor

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Acquire lands adjoining existing state game and wildlife areas to enhance their potential carrying capacity and potential species diversity.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Remove the three sill-level MDNR controlled dams on the Kalamazoo to restore a free flowing waterway to benefit fishery and recreators.	Private citizen
Incorporate restoration of prairie grass at on site disposal areas that are capped to contain paper waste that is removed and consolidated.	Private citizen
Acquire land along the Kalamazoo River to preserve the existing riverine corridor that serves as a critical migratory bird habitat and as a migratory corridor between the various state game areas (Allegan to Fort Custer and Allegan to Yankee Springs-Barry-Gun Lake).	Private citizen
Acquire land to increase the size of the Allegan State Game area which is under pressure from increased recreational use.	Private citizen
Incorporate features into paper waste excavation, where feasible, that would promote their use by ducks. For example, in areas that are excavated perhaps leave depressions after excavation that could be filled with water and attract ducks. This will benefits the ducks but also will help attract raptor species that prey on ducks such as hawks, falcons, and eagles.	Private citizen
Incorporate features into dam removal projects that would enhance the value of the site to recreators such as sportfishermen or kayakers.	Private citizen
Remove three sill-level MDNR controlled dams on the Kalamazoo to restore a free flowing waterway to benefit fishery resources first; any additional recreator benefits a bonus but should not be primary consideration.	Kalamazoo County Drain Commissioner (elected 11/00) – former county commissioner
Acquire land along the Kalamazoo River to preserve the existing riverine corridor and to prevent development of projects with potentially adverse environmental impacts (e.g., the proposed and approved auto junk yard in the floodplain in Comstock).	Kalamazoo County Drain Commissioner (elected 11/00) – former county commissioner
Address oily contamination in Davis Creek.	Kalamazoo County Drain Commissioner (elected 11/00) – former county commissioner
Clean out sediment backups in Arcadia Sewer focusing on the backups between downtown Kalamazoo and Western Michigan University (WMU).	Kalamazoo County Drain Commissioner

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Remove the three sill level dams along the Kalamazoo River to restore a free flowing waterway to the Kalamazoo – also consider two additional dams in the area – this is top priority and has been a MDNR objective for a number of years.	MDNR
Acquire property and restore wetlands in floodplain properties along the Kalamazoo.	MDNR
Acquire marsh habitat property at the mouth of the Kalamazoo River where it enters Lake Michigan in Saugatuck, area provides excellent fisheries spawning and rearing sites. Project facilitated because relevant land is under control of one owner. If possible, enhance river access from the site as well.	MDNR
Implement watershed protection projects addressing: erosion control, groundwater protection, and reduction in surface water removals all with goals of improving water quality and to avoid reducing instream flow below critical levels.	MDNR
Acquire floodplain and other lands to establish natural wildlife corridors that would then link the various state wilderness and game areas with each other.	MDNR
Take actions to enhance the colonization and reproduction of freshwater mussels that should be found in the river but are currently lacking.	MDNR
Attempt to remove and subsequently prevent the return of or minimize the spread of aquatic nuisance species (e.g., purple loosestrife and zebra mussels).	MDNR
Develop a trust fund for feasibility investigations and ultimately the restoration of species.	MDNR
Acquire land in upstream part of Kalamazoo geared at conversion of agricultural land to riparian habitat to reduce NPS nutrient and pollutant loads as well as to restore beneficial riparian habitat.	MDNR
Develop public education programs aimed at providing information on the nature and benefits of a fully functioning watershed and of the different types of plants and animals found in the system.	MDNR
Dredge shallow areas behind the present state owned dams to create some diversity in wetlands, by providing some open water shallow pools.	MDNR – Kalamazoo-Allegan district wildlife supervisor
Preserve the existing, and where necessary, restore the natural riparian zone along the Kalamazoo River.	U.S. FWS
Restore freshwater mussel beds in suitable areas of the river once appropriate conditions for success exist.	U.S. FWS
Establish natural wildlife corridors to connect Kalamazoo with Gun Lake and Fort Custer state game areas.	U.S. FWS
Preserve and restore wetland habitat.	U.S. FWS
Reduce nonpoint source pollutant loadings to the river.	U.S. FWS
Increase public recreational access to the river and resources following the recommendations of local wildlife managers.	U.S. FWS

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Pursue habitat restoration in areas where waste disposal cells are established – for example attempt to restore native prairie grasses on the caps of on-site waste disposal cells that are established.	U.S. FWS
Acquire floodplain and other lands to establish natural wildlife corridors that would then link the various state wilderness and game areas with each other while preserving the current characteristics of the Kalamazoo River corridor.	MDNR – wildlife biologist out of Allegan area, also effective property manager for Allegan state game area
Acquire existing in-holdings in the Allegan state game area to bring the entire area under the control of the MDNR.	MDNR – wildlife biologist out of Allegan area, also effective property manager for Allegan state game area
Acquire lands that provide opportunities for road access to the current MDNR bottomland holdings obtained from Consumers Power along the river between Allegan and Plainwell. These lands currently lack road access and must be visited by boat.	MDNR – wildlife biologist out of Allegan area, also effective property manager for Allegan state game area
Promote remedial alternatives that allow for a free flowing Kalamazoo and avoid creating open areas that could attract currently vulnerable species and increase the predation upon them (e.g., turtles).	MDNR – wildlife biologist out of Allegan area, also effective property manager for Allegan state game area
Undertake a "Battle Creek" type program consisting of a major clean-up, bank protection to reduce erosion, linear parks, and walkways.	CEO Council, Inc.
Recognize and preserve existing habitat before adversely affected by development.	CEO Council, Inc.
Provide for public ownership of property adjoining river (suggested 200 ft width) which is then reserved as green space or for parks.	CEO Council, Inc.
Conduct environmental assessment of the resources in the river area.	CEO Council, Inc.
Expand ordinances that prevent development within the floodplain as in Charleston Township (copy of wetlands protection ordinance attached).	Charleston Township
Consider the purchase of riverfront property for use as a community park.	City of Galesburg
Increase public recreational development along the Kalamazoo in Galesburg – reflects Galesburg residents survey preferences (67% respond Yes, 24% No).	City of Galesburg
Construct a bicycle-pedestrian bridge to cross the river at the site of the old auto bridge that had been removed in Galesburg – incorporate extensions for sitting-fishing areas.	City of Galesburg
Preserve and acquire lands of at least 100 ft adjoining the river in the city of Kalamazoo to accommodate a publicly accessible green space.	City of Kalamazoo – Office of the city manager

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Develop riverside linear park with viewing areas and access for canoeing and walkways paralleling the river (schematic plan provided).	City of Parchment
Develop a walkway and bridge that would circle Morrow Pond along the telephone company easement and connect with the existing River Oaks Park.	Comstock Township
Increase access and opportunities for recreationalists interested in exploring the Kalamazoo River (e.g., walkways, bike paths, x-county ski trails).	Downtown Kalamazoo Inc.
Explore options for increasing salmonid access up to Battle Creek – requires combination of fish ladders and desired removal of DNR dams – all fisheries projects subject to the addressing of the PCB contamination in the Kalamazoo.	MDNR Fisheries Division
Explore opportunities to expand interactive learning with increased facilities, access, and connectors between local schools and school owned lands adjacent to Kalamazoo River (model after Galesburg River Rams project).	Galesburg/Augusta Community Education
Increase access and opportunities for recreationalists interested in exploring the Kalamazoo River (e.g., walkways, bike paths, x-county ski trails).	James River Corporation
Consider development of a riverside learning platform for use by schoolchildren.	Kalamazoo Central High School
Develop a linear park in Kalamazoo along the river.	Kalamazoo City Parks and Grounds Division
Acquire additional lands to expand the Kalamazoo Nature Center.	Kalamazoo Nature Center
Increase trail access and viewing areas along the Kalamazoo on Kalamazoo Nature Center lands – link where possible with other trails to create a comprehensive trail system.	Kalamazoo Nature Center
Acquire additional lands to expand the Nature Conservancy holdings in Charleston township between Galesburg and August (have a parcel of floodplain forest – waters at the site support a healthy freshwater mussel population).	Michigan Nature Conservancy (E. Lansing office)
Conduct a survey of macro-invertebrates in the Rabbit River to assess its potential for again supporting an active sport fishery based around bass and northern pike.	Private citizen
Explore options for reduction of NPS loading of silt and sediment to the Rabbit River (main tributary to the Kalamazoo). A 319 watershed grant with EPA is in place to evaluate the issue. Benefits would include potential restoration of a once thriving sportfishery for small mouth bass, creek chubs, shiners, and ultimately northern pike.	Private citizen

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Restore mink populations in the area.	Private citizen
Restore fish habitat and a healthy fishery where PCB contamination is held to 0.05 ppm or lower of PCBs.	Private citizen
Look to enhance recreational boating opportunities with the removal of the dams on the Kalamazoo (exception of Lake Allegan dam) . . . look for opportunities to include white water sections as well.	Private citizen
Removal of the waste along the shores of Lake Allegan (e.g., tires, drums, lawn chairs) to enhance the perception of the river being a "clean" resource.	Private citizen
Increase the amount of deepwater areas in the nearshore part of Lake Allegan by conducting additional dredging if equipment is going to be onsite anyway as part of a remedial action.	Private citizen
Implement the Kalamazoo River Valley Trailway plan to provide non-motorized means of access along the river – would go from Battle Creek to city of Allegan and out to Portage. Envisioned trails would complete links with other existing trail systems already in place.	City of Kalamazoo
Acquire and preserve floodplain forest lands along the Kalamazoo River and its tributaries. Benefits would be helping to ensure the biodiversity of the Great Lakes in general and potential ecological benefits for aquatic species and improved water quality.	The Nature Conservancy, Michigan Chapter
Control the loading of PCBs into the Kalamazoo River and its tributaries.	MDNR
Remove remaining sill level dams on the Kalamazoo to eliminate fish blockages that will improve the local fishery.	MDNR
Undertake habitat restoration projects on the tributaries of the Kalamazoo – have lacked attention as a result of the ongoing PCB contamination but the tributaries could support viable fisheries and in several cases, could potentially support trout fisheries with the cold water flows.	MDNR
Increase public access to the Kalamazoo River and its tributaries, need for access to the Kalamazoo is especially acute in the region between Plainwell and Kalamazoo.	MDNR
Develop fish passage structures for Allegan dam to allow upstream migration of species (e.g., salmonids) currently blocked from these areas (requires assessment of potential impact on existing fishery resources upstream of Allegan dam as a result of creating access, e.g., impact on trout of salmon).	MDNR
Reduce sand and silt loadings from unpaved county roads into the tributaries of the Kalamazoo (e.g., selected paving or development of buffer strips).	MDNR
Address the culverts in tributaries on county roads that currently present a barrier to fish.	MDNR
Develop a public information and education program designed to increase awareness of local waterway resources and increase sense of stewardship and responsibility for these resources.	MDNR

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Remove all dams on the Kalamazoo with the exception of the one at Lake Allegan.	Private citizen
Remove any PCB contaminated soils and sediments, including floodplains, that would be left following the eventual implementation of a remedy (i.e., ensure all PCB contamination is removed).	Private citizen
Restore wetlands adversely impacted from PCB-related contamination.	Private citizen
Restore eagle populations in the area.	Private citizen
Provide resources necessary for improvement of the lake sturgeon fishery on the Kalamazoo River (e.g., remove dams) – note that the Kalamazoo was given the top rating of "high" in evaluation of suitability of Michigan streams draining into the Great Lakes in terms of its suitability to support a lake sturgeon population in the 1997 Lake Sturgeon Committee report.	U.S. FWS
Provide resources necessary to complete actions outlined in original City of Kalamazoo grant proposal to the Clean Michigan Initiative (CMI) program (original request for $6 million – grant of $2.6 million received).	City of Kalamazoo – Development Manager
Provide funding to continue the remediation and restoration of the former refinery site on Davis Creek. Possible actions could include restoring stream hydrology, restoring native vegetation, and funding the cleanup of the remaining contaminated resources (e.g., terrestrial and aquatic including free product on groundwater) – depending on timing could be considered a SR demonstration project where the funds are used to provide the required match for the Corps to proceed with any actions.	City of Kalamazoo – Development Manager
Continue to establish greenways along the waterfront of the Kalamazoo River and other waterways in the city.	City of Kalamazoo – Development Manager
Improve public access to the Kalamazoo River (e.g., canoe launch).	City of Kalamazoo – Development Manager
Remove remaining sill level dams on the Kalamazoo.	WMU – Environmental Institute director
Eliminate and/or control the loading of PCBs into the waters of the Kalamazoo River.	WMU – Environmental Institute director
Public education and awareness – initiate a graphic design competition to create a Davis Creek Watershed signage.	Davis Creek Watershed Steering Committee
Public education and awareness – install Davis Creek signage at major creek crossings and other appropriate locations.	Davis Creek Watershed Steering Committee
Public education and awareness – stencil urban storm sewer inlets.	Davis Creek Watershed Steering Committee

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Public education and awareness – prepare and distribute a Davis Creek watershed newsletter for the Davis Creek watershed implementation project.	Davis Creek Watershed Steering Committee
Public education and awareness – promote streambank re-vegetation and bioengineering techniques.	Davis Creek Watershed Steering Committee
Public education and awareness – implement a property owner NPS (nonpoint source) education and on-site assistance program targeted toward industrial, commercial, and concentrated residential properties.	Davis Creek Watershed Steering Committee
Public education and awareness – create a public speakers list of water quality protection and related topics to be made available to public/private organizations seeking program speakers.	Davis Creek Watershed Steering Committee
Public education and awareness – support ongoing community environmental programs which provide water quality benefits (i.e., soil conservation and groundwater protection, household hazardous waste collection, and recycling).	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – seek to create annual "river" or "watershed" festival similar to the famous Kalamazoo Flower Festival.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – expand the Creek Watch Hot Line of the River Partners Program to include periodic meetings with designated liaisons of responsible agencies.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – create a self sustaining adopt-a-creek program for Davis Creek.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – host in-county workshops and/or conferences on water quality issues.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – encourage school districts to incorporate watershed education and an annual watershed appreciation day into the curricula.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – assist citizen groups and neighborhood associations in self-directed efforts to engage members in watershed protection.	Davis Creek Watershed Steering Committee
Community involvement; effective citizen stewardship – create an annual Citizen Award program for watershed protection efforts.	Davis Creek Watershed Steering Committee
Watershed master planning and public stewardship – create an empowered interagency committee to further the initiatives of the Davis Creek implementation project.	Davis Creek Watershed Steering Committee
Watershed master planning and public stewardship – initiate integrated engineering re-design of the Davis Creek drainage corridor to creatively mitigate the detrimental effects of the disturbed hydraulics of Davis Creek (i.e., restore natural hydrology of Davis Creek including meanders and vegetation).	Davis Creek Watershed Steering Committee

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Watershed master planning and public stewardship – develop a long-term data collection strategy for monitoring the Davis Creek watershed.	Davis Creek Watershed Steering Committee
Watershed master planning and public stewardship – seek grant funding to evaluate contaminated groundwater impacts to the water quality of Davis Creek.	Davis Creek Watershed Steering Committee
Watershed master planning and public stewardship – use the Davis Creek Watershed Project as a model with which to encourage similar watershed planning efforts.	Davis Creek Watershed Steering Committee
Municipal storm water management – implement a structured storm drainage system inspection and maintenance program to protect the public's safety, water quality, and the infrastructure investment.	Davis Creek Watershed Steering Committee
Municipal storm water management – initiate an appropriately scaled water quality management program for all municipal storm water drainage systems.	Davis Creek Watershed Steering Committee
Municipal storm water management – seek creative funding mechanism to finance regular drainage system inspection, maintenance, and water quality management programs.	Davis Creek Watershed Steering Committee
Municipal storm water management – pursue cost-shared implementation of site-specific nonpoint source remediation projects through the MDEQ grant funded Davis Creek Implementation Project and other assistance programs.	Davis Creek Watershed Steering Committee
Earth movement, soil erosion and sedimentation control – pursue improved coordination and enhanced enforcement of Act 347 of 1972 Soil Erosion and Sedimentation Control.	Davis Creek Watershed Steering Committee
Earth movement, soil erosion and sedimentation control – assure Act 347 permitting officers possess MDEQ certification and receive annual training.	Davis Creek Watershed Steering Committee
Earth movement, soil erosion and sedimentation control – notify municipal storm water owners/operators of any Act 347 permits issued within their system service areas.	Davis Creek Watershed Steering Committee
Earth movement, soil erosion and sedimentation control – train on-street employees to recognize and report soil erosion control problems.	Davis Creek Watershed Steering Committee
Earth movement, soil erosion and sedimentation control – fund expanded Act 347 monitoring through monthly permit fees adjusted for total area of unstable soils per month.	Davis Creek Watershed Steering Committee
Site development design standards – develop minimum stream corridor setbacks and other critical area site design standards to provide water quality protection.	Davis Creek Watershed Steering Committee
Site development design standards – promote drainage management strategies which consider both the quantity and the quality impacts of storm water runoff.	Davis Creek Watershed Steering Committee
Site development design standards – develop storm water management requirements which encourage on-site management whenever possible.	Davis Creek Watershed Steering Committee

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Site development design standards – monitor temporary erosion controls concurrent with building construction inspections.	Davis Creek Watershed Steering Committee
Site development design standards – complete dye or other positive testing of waste drains prior to issuing a certificate of occupancy.	Davis Creek Watershed Steering Committee
Land use planning – identify stream corridor environmental features (e.g., flood control, water quality protection, habitat) to be protected through local land use planning.	Davis Creek Watershed Steering Committee
Land use planning – protect significant features through local land development standards.	Davis Creek Watershed Steering Committee
Land use planning – preserve urban stream corridor greenways.	Davis Creek Watershed Steering Committee
Intergovernmental cooperation and coordination – restrict environmental high-risk land use activities from locating in critical watershed areas.	Davis Creek Watershed Steering Committee
Intergovernmental cooperation and coordination – seek to implement the community retention basins recommended in the Olmsted-Davis Creek Drainage Study.	Davis Creek Watershed Steering Committee
Intergovernmental cooperation and coordination – initiate dialogue and establish working liaisons among the ten local agencies with Act 347 permitting authority.	Davis Creek Watershed Steering Committee
Intergovernmental cooperation and coordination – provide public trash/litter containers at high pedestrian traffic locations along the creek.	Davis Creek Watershed Steering Committee
Intergovernmental cooperation and coordination – initiate coordinated interjurisdictional development of model ordinances for stream corridor land use; drainage, construction details for stream crossings, roadways, and parking lots; NPS nuisance pollution; and guides for street sweeping, roadway deicing, etc.	Davis Creek Watershed Steering Committee
Remediation of contaminated sites; urban redevelopment; and sustainable growth – establish a local governmental liaison group to coordinate local involvement in state/federal led environmental cleanups.	Davis Creek Watershed Steering Committee
Remediation of contaminated sites; urban redevelopment; and sustainable growth – seek to reconstruct natural riparian conditions concurrently with any brown field redevelopment.	Davis Creek Watershed Steering Committee
Remediation of contaminated sites; urban redevelopment; and sustainable growth – seek removal of trapped sediment and dismantle the Davis Creek dam at Lakeside.	Davis Creek Watershed Steering Committee
Remediation of contaminated sites; urban redevelopment; and sustainable growth – establish training certification programs for bulk chemical users, similar to certification required for restricted use pesticides.	Davis Creek Watershed Steering Committee

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Site development design standards – restrict new, potentially significant NPS polluting facilities (e.g., industrial/commercial sites, parking lots) from conveying runoff directly to a water body.	Davis Creek Watershed Steering Committee
Site development design standards – provide public authority or other legal arrangements to assure long-term maintenance of privately installed storm water management systems.	Davis Creek Watershed Steering Committee
Establish wildlife corridors linking existing game areas to the Kalamazoo River (e.g., develop a wildlife corridor along Augusta Creek.	MSU – Kellogg Biological Station (professor with emphasis on aquatic system ecology)
Acquire existing lands with unique natural resource features for preservation and enhancement (e.g., use Nature Conservancy, Southwest Michigan Land Conservancy, and Michigan Natural Features Inventory information as a guide for acquisition targets).	MSU – Kellogg Biological Station (professor with emphasis on aquatic system ecology)
Implement any remaining activities from the Master Plan for the Lakeside Refinery Site / Davis Creek which look to turn the former refinery site into an area emphasizing passive recreation and restoration of natural habitats to the area.	Prepared for Davis Creek Watershed Steering Committee
Ensure complete removal of PCB contaminated sediments and soil deposits from the wetlands and floodplains in the assessment area.	Kalamazoo River Protection Association
Undertake means to increase the populations of all species adversely affected by the PCB contamination (e.g., fish, eagles, mink).	Kalamazoo River Protection Association
Removal of dams along Portage Creek and Kalamazoo River to restore free flowing waterways to benefit fishery and recreational users.	Kalamazoo River Protection Association
Increase the depth of Lake Allegan and all the navigational channels and marinas downstream of the Kalamazoo River – conduct after cleanup operations are completed.	Kalamazoo River Protection Association
Acquire lands to protect existing habitat and to create green spaces and wildlife migration corridor.	Kalamazoo River Protection Association
Implement best management practices (BMPs) to reduce NPS loads of sediment and other pollutants to waterways from agricultural lands (BMPs such as buffer strips, grassed waterways, conservation tillage, animal waste storage structures).	Allegan County Soil and Water Conservation District
Acquire lands to preserve and protect existing habitat and riparian corridor along the Kalamazoo River (i.e., prevent riverfront development that is likely if the PCB contamination issue can be adequately addressed).	Private citizen

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Acquire lands along tributaries to the Kalamazoo to preserve and protect existing habitat.	Private citizen
Examine opportunities to use NRDA restoration funds to set up a revolving fund to purchase tradable pollution permits under the trading regime that is to be set up on the Kalamazoo River – could also use funds for direct purchase and retirement of the permits.	Private citizen
Implement BMPs to reduce NPS loads of sediment and other pollutants to waterways from agricultural lands (BMPs such as buffer strips, grassed waterways, conservation tillage, animal waste storage structures).	Private citizen
Examine opportunity to establish watershed-based working groups or organizations that would be comprised of local government officials with current authority to oversee land use and land management – perspective is problems are dealt with at primarily the local or state level so a cohesive strategy for a watershed is hard to develop and/or implement.	Private citizen
Develop a wildlife corridor around Augusta Creek that would preserve its existing wetlands and riparian zone prior to the encroachment of human activity and structures.	Augusta Creek Watershed Association (Augusta)
Protect/restore northern pike spawning habitat with metal weirs designed to exclude carp that would disrupt the emergent vegetation (little sign of success in field studies in Green Bay, WI, e.g., algae builds up on weirs reducing wave action in enclosure which stimulates additional algae growth).	Wisconsin Department of Natural Resources
Restore pooled wetland and tributary stream northern pike spawning and rearing habitat through elimination of "perched" culverts and other impediments that restrict access to spawning/rearing sites, and active habitat restoration such as reshaping roadside ditches and providing hydrologic buffers with conversion of agricultural lands to wetlands, shallow scrapes and development of water control structures and supplemental sources for spawning/rearing areas.	Wisconsin Department of Natural Resources
Lower part of Kalamazoo is a designated natural river which requires a 300 ft buffer from the bank for new structures- model for upper Kalamazoo potentially.	MDNR
Lower part of Kalamazoo is a designated natural river which requires a 50 ft buffer of natural vegetation on private land (150 ft on public land) with some provisions for cutting to maintain views and remove dead vegetation – model for upper Kalamazoo potentially.	MDNR
Remove PCB waste plus paper waste and all dam implements and then remove the dam structures entirely.	Kalamazoo River Watershed Council
Establish safe portages until the dams are removed.	Kalamazoo River Watershed Council

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
If dams are not removed, introduce ways for wildlife to migrate up/downstream (i.e., fish ladders).	Kalamazoo River Watershed Council
Establish a 300-500 ft setback for all development on the Kalamazoo to establish/protect a riparian corridor.	Kalamazoo River Watershed Council
Restrict agriculture and animal use within a 500 ft distance from river edge.	Kalamazoo River Watershed Council
Increase public awareness of and opportunities for continued education on the functioning and role of the Kalamazoo River ecology.	Kalamazoo River Watershed Council
Revisit zoning along the river to establish designated places for new development and to clear standards for what will be allowed in locations and how it should look.	Kalamazoo River Watershed Council
Purchase conservation easements along existing undeveloped tracts of the river, perhaps in proximity of proposed trailway.	Kalamazoo River Watershed Council
Purchase properties adjacent to the river with existing, non-conforming (i.e., undesirable) uses.	Kalamazoo River Watershed Council
Assure sufficient contiguous wetlands of high quality to support the Kalamazoo River fishery.	Kalamazoo River Watershed Council
As river is cleaned of PCBs harvest contaminated fish and plant/transplant fish free from PCBs.	Kalamazoo River Watershed Council
Re-establish a thriving eagle population.	Kalamazoo River Watershed Council
Promote purchases and donations and offering agreements to landowners who agree to limit sale for development of riverfront (see this is similar to the conservation easement proposal).	Kalamazoo River Watershed Council
Buy back lands near (and within – in section titled remove inholdings) public holdings then remove the extensive two track systems.	Kalamazoo River Watershed Council
Encourage sale or donation of private lands to Nature Conservancies.	Kalamazoo River Watershed Council
Teach farmers and animal growers new and better ways to control runoff (i.e., look to increase awareness and implementation of Best Management Practices among the farming and livestock communities).	Kalamazoo River Watershed Council
Create farm fences to prevent livestock wastes in river and also to prevent the animals from getting into the river (example of a specific BMP for controlling NPS – also helps limit streambank erosion).	Kalamazoo River Watershed Council

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Promote residential rain gardens and ground water infiltration as opposed to stormwater flows; commercial rain gardens (check vs. the EPA's existing stormwater regulations that were being implemented at this time and that communities were looking for funding for – e.g., settlement and recharge ponds).	Kalamazoo River Watershed Council
Limit use of salt on roads and around facilities (e.g., apartment buildings and on college campuses).	Kalamazoo River Watershed Council
Parking lots and other indirect discharges must be identified and retrofitted with swirl technology.	Kalamazoo River Watershed Council
Construct wetland wastewater treatment plants.	Kalamazoo River Watershed Council
Encourage and facilitate residential, commercial, and industrial grey water systems.	Kalamazoo River Watershed Council
Explore options for water quality and discharge trading systems, development of TMDLs.	Kalamazoo River Watershed Council
Promote habitat restoration in urban areas by use of creative landscaping, as at the University of Washington.	Kalamazoo River Watershed Council
Link land (i.e., habitat corridors with planned or proposed bicycle corridors – wider bike easements).	Kalamazoo River Watershed Council
Increase efforts for education and implementation to increase the amount of prairie restoration in the area – for example look at controlled burns and establishment of the large contiguous tracts needed to make the restoration work.	Kalamazoo River Watershed Council
Remove existing steel cladding of PCB removal sites along the river and avoid the use of similar cladding at future sites.	Kalamazoo River Watershed Council
Improve the number and safety of boat launch (currently canoe and kayak) sites and increase the management at existing put-in sites to limit the informal creep of the sites and the accompanying erosion.	Kalamazoo River Watershed Council
Ensure river trail way for access on land and along water.	Kalamazoo River Watershed Council
Improve rural road crossings to prevent salt runoff during snow falls and remove the trash and debris build up along bridges and loading areas.	Kalamazoo River Watershed Council
Acquire lands for preservation, habitat, and recreation.	Kalamazoo River Watershed Council

Table A.1. Summary of potential KRE restoration projects (cont.)

Project description	Source organization
Acquire lands for canoe launch sites and primitive camping.	Kalamazoo River Watershed Council
Restore existing sites for habitat uses – Bryant Mill Pond PCB cleanup area.	Kalamazoo River Watershed Council
Promote bike pathways and parks between major cities – bring Portage Trailway to the river and link it with the Kal Haven and other trailways.	Kalamazoo River Watershed Council
Create riparian buffers to improve fish habitat (additional benefit of controlling NPS pollution loading).	Kalamazoo River Watershed Council
Purchase existing pollution credits and retire them (check on status of the TMDL Agreement for the Kalamazoo River).	Kalamazoo River Watershed Council
Remove non-native species of nuisance plants.	Kalamazoo River Watershed Council
Evaluate impact of county drains on the river including its pollutant and sediment loading and the impact high flow drains have on river scouring.	Kalamazoo River Watershed Council
Install passageways under roads to enable/facilitate animal movement.	Kalamazoo River Watershed Council
Encourage brownfield development as an alternative to control sprawl from development.	Kalamazoo River Watershed Council